

TABLE 6. SELECTION OF BONNET TEMPERATURE, REGISTER TEMPERATURE AND REGISTER DELIVERY (CFM)^{a,b}
(For Buildings Having a Heat Loss Greater than \$50,000 BTU/Hr.)
Register Delivery Volume in CFM per 1000 BTU per Hr.

BONNET TEMP. °F.	LINEAR DISTANCES FROM BONNET TO REGISTER, IN FEET															
	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160
140	138 ^a	136	134	132	130	128	127	126	125	124	123	121	120	119	118	117
14.0°	14.4 ^b	14.8	15.1	15.5	15.9	16.4	16.6	16.9	17.2	17.3	17.6	18.1	18.4	18.7	19.0	19.3
150	148	146	143	141	139	137	135	133	131	129	128	127	126	124	123	122
12.6	12.8	13.1	13.5	13.9	14.2	14.6	14.9	15.3	15.7	16.0	16.4	16.9	17.2	17.6	18.0	18.4
160	158	155	152	150	147	145	143	140	138	136	134	132	130	128	127	126
11.4	11.6	12.0	12.3	12.6	12.9	13.2	13.5	14.0	14.4	14.8	15.1	15.5	15.9	16.4	16.9	17.2
170	167	164	161	158	155	152	150	147	145	143	140	138	136	134	132	130
10.5	10.7	11.0	11.3	11.6	11.9	12.2	12.5	12.9	13.2	13.5	14.0	14.4	14.8	15.1	15.5	15.9
180	177	173	170	167	164	161	158	155	152	150	147	145	143	140	138	136
9.7	9.9	10.2	10.5	10.7	11.0	11.3	11.6	12.0	12.3	12.6	12.9	13.2	13.5	14.0	14.4	14.8
190	188	182	178	175	172	168	165	162	159	156	153	151	148	146	143	141
9.1	9.3	9.6	9.8	10.0	10.3	10.7	11.0	11.3	11.6	12.0	12.3	12.6	12.9	13.2	13.5	13.9
200	196	191	187	183	179	176	172	168	166	163	160	157	154	151	149	147
8.6	8.8	9.0	9.2	9.5	9.8	10.0	10.3	10.6	10.8	11.1	11.4	11.7	12.0	12.3	12.6	12.9

^a Register temperature, Fahrenheit. (Use upper value in each group.)

^b Register delivery volume in cubic feet per minute per 1000 Btu. (Use lower value in each group.)

^c Register delivery volumes in column 1 are for zero length of duct.

Forced Warm Air Systems

TABLE 7. DETERMINATION OF FREE AREA AND PRESSURE LOSS OF REGISTER FOR 22 DEG DEFLECTION OF AIR^{a, b, c, d}
Register Free Area in Square Inches (Upper value in each group)
Pressure Loss in Inches of Water (Lower value in each group)

CFM	RESIDENTIAL USE		CFM	RESIDENTIAL USE		CFM	DISTANCE FROM REGISTER TO OPPOSITE WALL							
	REG. SIZE OR EQUIV-ALENT	PRES-SURE LOSS		REG. SIZE OR EQUIV-ALENT	PRES-SURE LOSS									
							31-34	35-39	40-49	50-59	60-69	70-79	80-89	
Up to 59	10 x 4 10 x 6	.01 .01	100-119	12 x 6 14 x 4	.02 .02	700-739	243 0.02	186 0.03	127 0.06	85 0.11				
60-69	10 x 6 12 x 4	.01 .02	120-129	12 x 6 14 x 6	.02 .02	740-779	271 0.02	208 0.03	141 0.05	94 0.10				
70-79	10 x 6 12 x 6	.02 .02	130-169	14 x 6	.02	780-819		230 0.02	157 0.03	105 0.09				
			170-189	14 x 8	.02	820-859		254 0.02	173 0.04	115 0.08				
DISTANCE FROM REGISTER OF OPPOSITE WALL														
CFM	Up to 18	19-21	22-24	25-27	28-30	31-34	35-39	40-49	50-59	60-69	70-79	80-89	90-99	100-109
190-209	58 0.02	49 0.03	38 0.05	39 0.08	24 0.11	19 0.16				900-939	304 0.02	207 0.04	138 0.07	
210-229	63 0.02	54 0.03	45 0.04	35 0.06	28 0.10	23 0.13				940-979	333 0.02	226 0.03	151 0.07	103 0.12
230-249		71 0.02	54 0.04	43 0.06	34 0.08	28 0.11	22 0.17			980-1019	360 0.02	245 0.03	163 0.06	118 0.11
250-269		84 0.02	63 0.03	49 0.05	40 0.07	33 0.10	25 0.16			1020-1059	390 0.02	265 0.03	177 0.06	127 0.11
270-299		100 0.02	78 0.03	60 0.04	48 0.06	38 0.09	20 0.13			1060-1099		235 0.03	180 0.06	137 0.10
300-339			98 0.02	73 0.04	60 0.06	48 0.07	37 0.11			1100-1139		307 0.03	204 0.05	147 0.09
340-379			123 0.02	95 0.03	78 0.04	61 0.06	47 0.09	33 0.18		1140-1179		330 0.02	220 0.05	158 0.09
380-419				117 0.02	94 0.03	75 0.05	58 0.08	39 0.15		1180-1219		353 0.02	235 0.04	169 0.08
420-459				143 0.02	113 0.03	91 0.04	70 0.06	47 0.13		1220-1259		376 0.02	251 0.04	180 0.08
460-499				168 0.02	135 0.03	108 0.04	83 0.06	56 0.11		1260-1299		401 0.02	267 0.04	192 0.07
500-539					159 0.02	125 0.03	97 0.05	66 0.10		1300-1339		426 0.02	284 0.04	204 0.07
540-579					185 0.02	147 0.03	113 0.04	77 0.08		1340-1379		452 0.02	301 0.04	217 0.06
580-619					213 0.02	169 0.03	130 0.04	83 0.08	51 0.18	1380-1419		479 0.02	319 0.04	230 0.06
620-659						192 0.02	147 0.03	100 0.04	59 0.15	1420-1459		508 0.02	338 0.03	244 0.06
660-699						217 0.02	168 0.03	113 0.06	73 0.15	1460-1500		536 0.02	356 0.03	256 0.06

A B

A' B'

^a If register selected based on distance from register to opposite wall is unsatisfactory on account of size or pressure loss, it is permissible to shift one or more spaces left or right in the tables to obtain a more suitable register. If requirements fall in blank space, select two registers in place of one and divide CFM capacity between the two registers.

^b Pressure loss is based on FLAT FACE ADJUSTABLE BAR TYPE and does NOT include stackhead.

^c Values on the right of line A and A' should not be used in applications such as churches, auditoriums, and concert halls.

^d Values on right of line B and B' should not be used in applications such as residential work, motion picture theaters, court rooms and schools.

^e For floor and baseboard registers where a velocity of approximately 300 FPM is used, the free area = $\frac{\text{CFM} \times 144}{300}$ or approximately, $\frac{\text{CFM}}{2}$. Assume a pressure loss of .01.